

John David Roberts, Ph.D.

Curriculum Vitae

Date and Place of Birth: June 29, 1954; Asheville, NC

Citizenship: United States of America

**Current Position and
Work Address:**

Staff Scientist
Eukaryotic Transcriptional Regulation Group
Laboratory of Molecular Carcinogenesis
Division of Intramural Research

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Education:

1968 - 1972: Mars Hill High School, Valedictorian
Mars Hill, NC 28754

1972 - 1976: B.S. in Chemistry, cum laude
University of North Carolina, Chapel Hill
Chapel Hill, NC 27514

1976 - 1981: Ph.D. in Biology and Biomedical Science
Program in Molecular Biology
Washington University
St. Louis, MO 63110
Thesis advisor: Dr. Michael Lieberman

Post Graduate Training & Employment

Sept 1981 – Sept 1985:	Post Doctoral Fellow Laboratory of Dr. Roger McMacken Biochemistry Department Johns Hopkins University School of Hygiene & Public Health Baltimore, MD 21205
Sept 1985 – Sept 1992:	Staff Fellow / Senior Staff Fellow Mutagenesis Group Laboratory of Molecular Genetics NIEHS Research Triangle Park, NC 27709
Sept 1992 – Aug 2009:	Staff Scientist Metastasis Group Lab of Molecular Carcinogenesis NIEHS Research Triangle Park, NC 27709
Aug 2009 – Mar 2013:	Staff Scientist Cell Adhesion Group Lab of Molecular Carcinogenesis NIEHS Research Triangle Park, NC 27709
Apr 2013 – present:	Staff Scientist Eukaryotic Transcriptional Regulation Group Lab of Molecular Carcinogenesis NIEHS Research Triangle Park, NC 27709

Honors & Awards

Morehead Scholar, UNC-CH, 1972-1976

Phi Eta Sigma (freshman/sophomore honors program), UNC-CH, 1972-1974

Phi Beta Kappa, UNC-CH, 1976

NRSA Post Doctoral Fellowship for study at Johns Hopkins University,
1984-1985

U.S. Department of Health and Human Services:

Recognition for Sustained High Quality Work Performance, 1994

NIEHS Award of Merit, 1995

Recognition for Sustained High Quality Work Performance, 1996

Recognition for Sustained High Quality Work Performance, 2000

Recognition for Sustained High Quality Work Performance, 2003

Manuscript in *Biochemistry and Cell Biology* (Ray et al., vol **88**, pp 947-956,
2010) chosen as a “Paper of the Month” for the *Environmental Factor*,
February 2011.

NIH Office of the Director, Honor Award, 2012

Part of the team Implementing the Animal Care and Use Guide at NIH

Promotion to GS-14 Staff Scientist, February 2013

Current Society Memberships

Alpha Chi Sigma (professional chemistry fraternity)

American Association for the Advancement of Science

American Association for Cancer Research

American Society for Biochemistry and Molecular Biology

Metastasis Research Society

National Center for Science Education

North Carolina Association for Biomedical Research

Current NIEHS and NIH Committees / Service

NIEHS Animal Care and Use Committee	January 1998 – present
Deputy Chair	September 2004 – April 2010
Chair	April 2010 – present
LMC Web site coordinator	October 2003 - present
NIH Animal Research Advisory Committee	April 2010 - present

Past NIEHS and NIH Committees / Service

NIEHS Quality Council	April 1994 - April 1996
NIEHS Science Education Committee	June 1994 - June 1998
Co-organizer of The Sixth NIEHS Frontiers in Science Mini Symposium, “The Metastatic Cascade: Critical Events in the Dissemination of Cancer”	June 18, 1996
NIEHS Assembly of Scientists	
President Elect:	January 1999 - December 1999
President:	January 2000 - December 2000
Past-President:	January 2001 - December 2001
NIEHS Computer Information Officer Advisory Committee	July 2000 - January 2001
NIEHS Division of Intramural Research Training Advisory Committee	January 2002 – December 2003
LMC Trainees Conference Organizer	October 2003 – September 2004
LMC Stem Cell Biologist Search Committee	December 2003 – December 2004
National Toxicology Program Vision Committee	September 2003 – September 2004
NIEHS Committee on Promotions III	June 2003 – December 2006

NIEHS Technology Evaluation Advisory Committee	January 2003 – September 2008
NIEHS Division of Intramural Research Intranet Advisory Committee	January 2008 – December 2009
NIEHS Science Managers Committee	February 2008 – December 2008
NIEHS Board of Survey	July 2008 – December 2009
Chair of NIEHS Comparative Medicine Branch Veterinarian Search Committee	September 2010 – February 2011
NIH Fellows Award for Research Excellence (FARE) Judge	February 2011 – May 2011
NIH ARAC-APD Subcommittee to incorporate the 2011 “Guide” into NIH animal research	September 2011 – July 2012
NIEHS Comparative Medicine Branch Chief Search Committee	November 2011 – January 2013

Outside Science-related Activities / Service

Nominated as candidate for the Board of Directors for the
Metastasis Research Society – 2012

Invited by North Carolina Association for Biomedical Research to lead a
panel discussion on Animal Care and Use Committee functions, May 2010

Metastasis Research Society –subcommittee member and primary author for rewriting
society bylaws, 2009

North Carolina Central University – Adjunct Faculty, Cell Biology Program, 2008-2009;
primary thesis advisor for Brian Rogers during his research project for which he
earned his Masters in Cell Biology

Invited by Natural Sciences and Engineering Research Council of Canada
(NSERC) to take part in a site visit/review for a Collaborative Research and
Development Grant application from the University of Toronto, 1998

Invited grant reviewer for the National Science Foundation - 2002

Invited grant reviewer for the Breast Cancer Campaign, London, England

Invited reviewer for the following journals (highlighting indicates within last 6 years):

Anatomical Record

BBA – Mol Cell Biol Lipids

BMC Pharm and Tox

Biochemical Pharmacology

Biochemie

Biochemistry

British Journal of Cancer

Cancer Letters

Cancer Research

Cellular Oncology

Clinical Cancer Research

Experimental Cell Research

Experimental Lung Research

International Journal of Cancer

Journal of Biological Chemistry

Journal of Pharmacol. Exper. Therapeutics

Journal of Cellular Physiology

Molecular Cancer Therapeutics

Molecular Carcinogenesis

Mutation Research

Neoplasia

Oncogene

Toxicological Sciences

Tumor Biology

Selected Invited Presentations

“Metastasis: History and Recent Progress,” presented to the Laboratory of Experimental Pathology, NIEHS, RTP, NC, August 2003.

“The Study of Tumor Cell Metastasis in Animals and in Culture,” Comparative Medicine Branch, NIEHS, RTP, NC, October 2003.

“Signal Transduction in Tumor Cell Metastasis,” Department of Biological Sciences, College of Pharmacy, University of South Carolina Cancer Center, Columbia, SC, June 2004.

“The Effect of Diet on Cancer Cell Behavior and Metastasis,” North Carolina State University Biochemistry Club, Raleigh, NC, January 2008.

Member, Panel Discussion on Science Careers for UNC-CH Chemistry Majors; April 2009

Presentation to NIEHS Assembly of Laboratory Scientists, August 22, 2012, on “Strategies for Animal Research and Preparation of Animal Study Protocols”

Presented talk at NCABR Workshop on Ethics in Animal Research, “How Cancer Cells Metastasize (and what can we do about it?), NIEHS, RTP, NC; February 6, 2013.

Invited to take part in Panel Discussion on Career Options for STEM program for teachers, June 24, 2013, NIEHS

Primary Publications

1. George, M.D., Wine, R.N., Lackford, B., Kissling, G.E., Akiyama, S.K., Olden, K., and **Roberts, J.D.** “p38 Mitogen-activated Protein Kinase Associates with Vinculin during Arachidonic Acid Modulation of Human Breast Carcinoma Cell Adhesion.” *Biochemistry and Cell Biology*, published on-line (10.1139/bcb-2013-0013) (2013).
2. Ray, D.M., Myers, P., Painter, J.T., Hoenerhoff, M.J., Olden, K., and **Roberts, J.D.** “Inhibition of Transforming Growth Factor- β -activated Kinase-1 Blocks Human Breast Cancer Cell Adhesion, Invasion, and Metastasis.” *British Journal of Cancer*, **107** 129-136 (2012).
3. Matsuoka, T., Yashiro, M., Nishioka, N., Hirakawa, K., Olden, K., and **Roberts, J.D.** “PI3K/Akt Signaling is Required for Attachment and Spreading, and Growth *in vivo* of Metastatic Scirrhous Gastric Carcinoma.” *British Journal of Cancer*, **106** 1535-1542 (2012).
4. Nishioka, N., Matsuoka, T., Yashiro, M., Hirakawa, K., Olden, K. and **Roberts J.D.** “Plasminogen activator inhibitor 1 RNAi suppresses gastric cancer metastasis *in vivo*.” *Cancer Science*, **103** 228-232 (2012).
5. Nishioka, N., Matsuoka, T., Yashiro, M., Hirakawa, K., Olden, K. and **Roberts J.D.** “Linoleic Acid Enhances Angiogenesis through Suppression of Angiostatin Induced by Plasminogen Activator Inhibitor 1.” *British Journal of Cancer*, **105** 1750-17558 (2011).
6. Trempus, C.S., Wei, S.-J., Humble, M.M., Dang, H., Bortner, C.D., Sifre, M., Kissling, G.E., Sunman, J.A., Akiyama, S.K., **Roberts, J.D.**, Tucker, C.J., Chun, K.-S., Tennant, R.W., and Langenbach, R. “A Novel Role for the T-box Transcription Factor *Tbx1* as a Negative Regulator of Tumor Cell Growth in Mice.” *Molecular Carcinogenesis*, **50** 981-991 (2011).
7. Garcia, M.C., Williams, J., Johnson, K., Olden, K., and **Roberts, J.D.** “Arachidonic Acid Stimulates Formation of a Novel Complex Containing Nucleolin and RhoA.” *FEBS Letters*, **585** 618-622 (2011).
8. Ray, D.M., Rogers, B.A., Sunman, J.A., Akiyama, S.K., Olden, K., and **Roberts, J.D.** “Lysine 63-linked Ubiquitination is Important for Arachidonic Acid-induced Cellular Adhesion and Migration.” *Biochemistry and Cell Biology*, **88** 947-956 (2010).
9. Matsuoka, T., Adair, J.E., Lih, F.B., Hsi, L.C., Rubino, M., Eling, T.E., Tomer, K.B., Yashiro, M., Hirakawa, K., Olden, K., and **Roberts, J.D.** “Elevated Dietary Linoleic Acid Increases Gastric Carcinoma Cell Invasion and Metastasis in Mice.” *British Journal of Cancer*, **103** 1182-1191 (2010).
10. Garcia, M.C., Ray, D.M., Rubino, M., Lackford, B., Olden, K., and **Roberts, J.D.** “Arachidonic Acid Stimulates Cell Adhesion through a Novel p38MAPK-RhoA

Signaling Pathway that Involves Heat Shock Protein 27.” *Journal of Biological Chemistry*, **284** 20936-20945 (2009).

11. Adair, J.E., Stober, V., Sobhany, M., Zhuo, L., **Roberts, J.D.**, Negishi, M., Kimata, K., and Garantzotis, S. “Inter- α -trypsin Inhibitor Promotes Bronchial Epithelial Repair After Injury Through Vitronectin Binding.” *Journal of Biological Chemistry*, **284** 16922-16930 (2009).
12. Zhu, H., Glasgow, W., George, M.D., Chrysovergis, K., Olden, K., **Roberts, J.D.**, and Eling, T.E. “15-Lipoxygenase-1 Activates Tumor Suppressor p53 Independent of Enzymatic Activity.” *International Journal of Cancer*, **123** 2741-2749 (2008).
13. Reyes-Reyes, M.E., George, M.D., **Roberts, J.D.**, and Akiyama, S.K. “P-Selectin Activates Integrin-mediated Colon Carcinoma Cell Adhesion to Fibronectin.” *Experimental Cell Research*, **312** 4056-4069 (2006).
14. Nony, P.A., Kennett, S.B., Glasgow, W.C., Olden, K. and **Roberts, J.D.** “15(S)-Lipoxygenase-2 Mediates Arachidonic Acid-stimulated Adhesion of Human Breast Carcinoma Cells through the Activation of TAK1, MKK6, and p38 MAPK”. *Journal of Biological Chemistry*, **280** 31413-31419 (2005).
15. Kennett, S.B., **Roberts, J.D.**, and Olden, K. “Requirement of PKC μ Activation and Calpain-mediated Proteolysis for Arachidonic Acid-stimulated Adhesion of MDA-MB-435 Human Mammary Carcinoma Cells to Collagen Type IV”. *Journal of Biological Chemistry*, **279** 3300-3307 (2004).
16. Palmantier, R., George, M.D., Akiyama, S.K., Wolber, F.M., Olden, K. and **Roberts, J.D.** “*cis*-Polyunsaturated Fatty Acids Stimulate β 1 Integrin-mediated Adhesion of Human Breast Carcinoma Cells to Type IV Collagen by Activating Protein Kinases C- ϵ and - μ .” *Cancer Research*, **61** 2445-2452 (2001).
17. Paine, E., Palmantier, R., Akiyama, S.K., Olden, K. and **Roberts, J.D.** “Arachidonic Acid Activates Mitogen-activated Protein (MAP) Kinase-activated Protein Kinase 2 and Mediates Adhesion of a Human Breast Carcinoma Cell Line to Collagen Type IV through a p38 MAP Kinase-dependent Pathway.” *Journal of Biological Chemistry*, **275** 11284-11290 (2000).
18. Klein, J.-L.D., **Roberts, J.D.**, George, M.D., Kurtzberg, J., Breton, P., Chermann, J.-C., and Olden, K. “Swainsonine Protects Both Murine and Human Hematopoietic Systems from Chemotherapeutic Toxicity.” *British Journal of Cancer*, **80** 87-95 (1999).
19. **Roberts, J. D.**, Klein, J.-L.D., Palmantier, R., Dhume, S.T., George, M.D., and Olden, K. “The Role of Protein Glycosylation Inhibitors in the Prevention of Metastasis and Therapy of Cancer.” *Cancer Detection and Prevention*, **22** 455-462 (1998).

20. Palmantier, R., **Roberts, J.D.**, Glasgow, W., Eling, T., and Olden, K. "Regulation of the Adhesion of a Human Breast Carcinoma Cell Line to Type IV Collagen and Vitronectin: Roles for Lipoxygenase and Protein Kinase C." *Cancer Research*, **56** 2206-2212 (1996).
21. Das, P.C., **Roberts, J.D.**, White, S.L., and Olden, K. "Activation of Resident Tissue-Specific Macrophages by Swainsonine." *Oncology Research*, **7** 425-433 (1995).
22. Rhodes, N., Paules, R.S., and **Roberts, J.D.** "Molecular Mechanisms of Environmental Carcinogenesis." *Environmental Health Perspectives*, **103** 504-506 (1995).
23. Izuta, S., **Roberts, J.D.**, and Kunkel, T.A. "Replication Error Rates for G•dGTP, T•dGTP and A•dGTP Mispairs and Evidence for Differential Proofreading by Leading- and Lagging-strand DNA Replication Complexes in Human Cells." *Journal of Biological Chemistry*, **270** 2595-2600 (1995).
24. **Roberts, J.D.**, Izuta, S., Thomas, D.C., and Kunkel, T.A. "Mispair-, Site-, and Strand-specific Error Rates during Simian Virus 40 Origin-dependent Replication In Vitro with Excess Deoxythymidine Triphosphate." *Journal of Biological Chemistry*, **269** 1711-1717 (1994).
25. **Roberts, J.D.**, Nguyen, D., and Kunkel, T.A. "Frameshift Fidelity During Replication of Double-Stranded DNA in HeLa Cell Extracts." *Biochemistry*, **32** 4083-4089 (1993).
26. Bebenek, K., Thomas, D.C., **Roberts, J.D.**, Eckstein, F., and Kunkel, T.A. "Effects of 3'-Azido-3'-Deoxythymidine Metabolites on Simian Virus 40 Origin-Dependent Replication and Heteroduplex Repair in HeLa Cell Extracts." *Molecular Pharmacology*, **43** 57-63 (1993).
27. Bebenek, K., **Roberts, J.D.**, and Kunkel, T.A. "The Effects of dNTP Pool Imbalances on Frameshift Fidelity during DNA Replication." *Journal of Biological Chemistry*, **267** 3589-3596 (1992).
28. Thomas, D.C., **Roberts, J.D.**, Sabatino, R.D., Myers, T.W., Tan, C.-K., Downey, K.M., So, A.G., Bambara, R.A., and Kunkel, T.A. "Fidelity of Mammalian DNA Replication and Replicative DNA Polymerases." *Biochemistry*, **30** 11751-11759 (1991).
29. Kunkel, T.A., **Roberts, J.D.**, and Sugino, A. "The Fidelity of DNA Synthesis by the Catalytic Subunit of Yeast DNA Polymerase- α Alone and with Accessory Proteins." *Mutation Research*, **250** 175-182 (1991).
30. **Roberts, J.D.**, Thomas, D.C., and Kunkel, T.A. "Exonucleolytic Proofreading of Leading and Lagging Strand DNA Replication Errors." *Proceedings of the National Academy of Sciences USA*, **88** 3465-3469 (1991).
31. Thomas, D.C., **Roberts, J.D.**, and Kunkel, T.A. "Heteroduplex Repair in Extracts of Human HeLa Cells." *Journal of Biological Chemistry*, **266** 3744-3751 (1991).

32. Bebenek, K., Abbotts, J., **Roberts, J.D.**, Wilson, S.H., and Kunkel, T.A. "Specificity and Mechanism of Error-Prone Replication by HIV-1 Reverse Transcriptase." *Journal of Biological Chemistry*, **264** 16948-16956 (1989).
33. Kunkel, T.A., Bebenek, K., **Roberts, J.D.**, Smith, M.P., and Thomas, D.C. "Analysis of Fidelity Mechanisms with Eukaryotic DNA Replication and Repair Proteins." *Genome*, **31** 100-103 (1989).
34. **Roberts, J.D.**, Preston, B.D., Johnston, L.A., Soni, A., Loeb, L.A., and Kunkel, T.A. "Fidelity of Two Retroviral Reverse Transcriptases during DNA-Dependent DNA Synthesis In Vitro." *Molecular and Cellular Biology*, **9** 469-476 (1989).
35. **Roberts, J.D.**, Bebenek, K., and Kunkel, T.A. "The Accuracy of Reverse Transcriptase from Human Immunodeficiency Virus." *Science*, **242** 1171-1173 (1988).
36. **Roberts, J.D.** and Kunkel, T.A. "Fidelity of a Human Cell DNA Replication Complex." *Proceedings of the National Academy of Sciences USA*, **85** 7064-7068 (1988).
37. **Roberts, J.D.** and Kunkel, T.A. "Mutational Specificity of Animal Cell DNA Polymerases." *Environmental Mutagenesis*, **8** 769-789 (1986).
38. Dodson, M., Echols, H., Wickner, S., Alfano, C., Mensa-Wilmot, K., Gomes, B., LeBowitz, J., **Roberts, J.D.**, and McMacken, R. "Specialized Nucleoprotein Structures at the Origin of Replication of Bacteriophage λ : Localized Unwinding of Duplex DNA by a Six-Protein Reaction." *Proceedings of the National Academy of Sciences USA*, **83** 7638-7642 (1986).
39. Dodson, M., **Roberts, J.**, McMacken, R., and Echols, H. "Specialized Nucleoprotein Structures at the Origin of Replication of Bacteriophage λ : Complexes with λ O Protein and with λ O, λ P, and Escherichia coli DnaB Proteins." *Proceedings of the National Academy of Sciences USA*, **82** 4678-4682 (1985).
40. Echols, H., Dodson, M., Better, M., **Roberts, J.D.**, and McMacken, R. "The Role of Specialized Nucleoprotein Structures in Site-Specific Recombination and Initiation of DNA Replication." *Cold Spring Harbor Symposium in Quantitative Biology*, **49** 727-733 (1985).
41. **Roberts, J.D.** and McMacken, R. "The Bacteriophage λ O Replication Protein: Isolation and Characterization of the Amplified Initiator." *Nucleic Acids Research*, **11** 7435-7452 (1983).
42. Wold, M.S., Mallory, J.B., **Roberts, J.D.**, LeBowitz, J.H., and McMacken, R. "Initiation of Bacteriophage λ DNA Replication In Vitro with Purified λ Replication Proteins." *Proceedings of the National Academy of Sciences USA*, **79** 6176-6180 (1982).

43. Dresler, S.L., **Roberts, J.D.**, and Lieberman, M.W. "Characterization of DNA Repair Synthesis in Permeable Human Fibroblasts." *Biochemistry*, **21** 2557-2564 (1982).
44. **Roberts, J.D.** and Lieberman, M.W. "DNA Repair Synthesis in Permeable Human Fibroblasts Exposed to UV Radiation and N-Acetoxy-2-Acetylamino-fluorene." *Biochemistry*, **18** 4499-4505 (1979).

Invited Book Chapters

1. **Roberts, J.D.**, and Kunkel, T.A. "The Fidelity of Eukaryotic DNA Replication," in DNA Replication in Eukaryotic Cells: Concepts, Enzymes and Systems, (M.L. DePamphilis, ed.) Cold Spring Harbor Press, Cold Spring Harbor, NY, pp. 217-247 (1996) (republished, 1999).
2. **Roberts, J.D.**, and Kunkel, T.A. "Fidelity of DNA Replication in Human Cells," in Methods in Molecular Genetics: Gene and Chromosome Analysis (Part B), (K.W. Adolph, ed.) Academic Press, Inc., Orlando, FL, vol 2, pp. 295-313 (1993).
3. Kunkel, T.A., **Roberts, J.D.**, Thomas, D.C., and Nguyen, D.C. "The 'Fine Structure' of DNA Replication Fidelity," in DNA Repair Mechanisms, Alfred Benzon Symposium 35, (V.A. Bohr, K. Wassermann, K.H. Kraemer, and J.H. Thaysen, eds.) Munksgaard Intl., Copenhagen, pp. 189-199 (1992).
4. **Roberts, J.D.**, Hamatake, R.K., Fitzgerald, M.P., Sugino, A., and Kunkel, T.A. "Effect of Accessory Proteins on the Fidelity of DNA Synthesis by Eukaryotic Replicative Polymerases," in Progress in Clinical and Biological Research, Volume 340A, Mutation and the Environment, Part A: Basic Mechanisms, (M.L. Mendelsohn and R.J. Albertini, eds.), Wiley-Liss, Inc., New York, pp. 91-100 (1990).
5. Thomas, D.C., **Roberts, J.D.**, Fitzgerald, M.P. and Kunkel, T.A. "Fidelity of Animal Cell DNA Polymerases α and δ and of a Human DNA Replication Complex," in Antimutagenesis and Anticarcinogenesis Mechanisms, Vol. II (Y. Kuroda, D.M. Shankel and M.D. Waters, eds.), Plenum Press, New York, pp. 289-297 (1990).
6. Kunkel, T.A., Bambara, R.A., Bebenek, K., **Roberts, J.D.**, Sabatino, R.D., Smith, M.P., and Soni, A. "Analysis of Mutational Mechanisms with Eukaryotic DNA Polymerases," in Mechanisms and Consequences of DNA Damage Processing (E. Friedberg and P. Hanawalt, eds.) A.R. Liss, Inc., New York, pp. 521-528 (1988).
7. **Roberts, J.D.** and Kunkel, T.A. "Fidelity of DNA Synthesis by Human Cell Extracts during In Vitro DNA Replication from the SV40 Origin," in DNA Replication and Mutagenesis (R. Moses and W. Summers, eds.) American Society for Microbiology Publications, Washington, DC, pp. 182-190 (1988).
8. Kunkel, T.A., **Roberts, J.D.**, and Zakour, R.A. "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection," in Methods in Enzymology, vol. 154, (R. Wu and L. Grossman, eds.) Academic Press, Inc., Orlando, FL, pp. 367-382 (1987).
9. McMacken, R., Alfano, C., Gomes, B., LeBowitz, J.H., Mensa-Wilmot, K., **Roberts, J.D.**, and Wold, M. "Biochemical Mechanisms in the Initiation of Bacteriophage λ DNA Replication," in DNA Replication and Recombination (R. McMacken and T.J. Kelly, eds.) A.R. Liss, Inc., New York, pp. 227-245 (1987).

10. McMacken, R., Wold, M.S., LeBowitz, J.H., **Roberts, J.D.**, Mallory, J.B., Loehrlein, C., and Wilkinson, J.A.K. "Replication of Plasmid λ dv and Single-Stranded Phage Chromosomes Promoted by Purified Bacteriophage λ O and P Initiation Proteins," in Mechanisms of DNA Replication and Recombination (N.R. Cozzarelli, ed.) A.R. Liss, Inc., New York, pp. 819-848 (1983).
11. Plishker, G.A., Vaughn, L., Jarrett, H.W., Reid, T., **Roberts, J.D.**, and Penniston, J.T. "Energy-Dependent Endocytosis in White Erythrocyte Ghosts," in Membranes and Disease (L. Bollis, J.F. Hoffman and A. Leaf, eds.), Raven Press, New York, pp. 19-29 (1976).

Selected Published Abstracts

1. **Roberts, J.D.**, George, M.D., Garcia, M.C., Akiyama, S.K., and Olden, K. "p38 MAPK Regulates Multiple Pathways during Arachidonic Acid Modulation of Human Carcinoma Cell Adhesion." *Clinical & Experimental Metastasis*, **26** 915 (2009).
2. Rubino, M., Adair, J.E., **Roberts, J.D.**, and Olden, K. "Omega-3 Fatty Acid Effects on Human Breast Carcinoma Cell Invasion." *Proceedings of the American Association for Cancer Research*, **49**: 1168 (2008).
3. Ray, D.M., **Roberts, J.D.**, and Olden, K. "The Role of TGF Beta Activated Kinase in Fatty Acid-induced Signaling and Adhesion of Human Carcinoma Cells." *Proceedings of the American Association for Cancer Research*, **49**: 3480 (2008).
4. **Roberts, J.D.**, Garcia, M.C., Johnson, K., Williams, J., and Olden, K. "Nucleolin Forms a Novel Complex with Activated Rho in Arachidonic Acid-treated MDA-MB-435 Breast Carcinoma Cells." *Proceedings of the American Association for Cancer Research*, **49**: 5182 (2008).
5. Garcia, M.C., **Roberts, J.D.**, Johnson, K., Williams, J., and Olden, K. "Arachidonic Acid Induces p38-mediated Rho/ROCK Signaling to Promote Adhesion of Breast Carcinoma Cells on Type IV Collagen." *Proceedings of Cytoskeleton Signaling in Cancer*, p. 34 (2008).
6. Nishioka, N., **Roberts, J.D.**, Foley, J.F., Yashiro, M., Hirakawa, K., and Olden, K. "Peritoneal metastasis of Scirrhou Gastric Cancer is Inhibited by Vector-mediated RNA Interference of Plasminogen Activator Inhibitor Type 1 Expression In Vivo." *Proceedings of the American Association for Cancer Research*, **46**: 698 (2005).
7. Kennett, S.B., Nony, P.A., Glasgow, W.C., **Roberts, J.D.**, and Olden, K. "15-Lipoxygenase-2 Metabolism of Arachidonic Acid Mediates Adhesion of Human Breast Carcinoma Cells through Activation of TAK1 and the p38MAPK and PKC μ Pathways." *Molecular Biology of the Cell*, **14** (Suppl.): 337a (2004).
8. Matsuoka, T., Yashiro, M., **Roberts, J.D.**, Olden, K., and Hirakawa, K. "Dietary Linoleic Acid Enhances Human Scirrhou Gastric Carcinoma Cell Invasion and Metastasis." *Proceedings of the American Association for Cancer Research*, **45**: 424 (2004).
9. Nishioka, N., Yashiro, M., Hirakawa, K., Olden, K., and **Roberts, J.D.** "Linoleic Acid Enhances Invasion Ability of Human Scirrhou Gastric Cancer Cells through PAI-1." *Proceedings of the American Association for Cancer Research*, **45**: 426 (2004).
10. Kennett, S.B., **Roberts, J.D.**, Akiyama, S.A., Hermansen, R., Petrovics, G., Anderson, W.B., and Olden, K. "Arachidonic Acid Effects on Protein Kinase C isoforms during

Induction of Adhesion of Human Mammary Carcinoma Cells.” *Clinical & Experimental Metastasis*, **19** (Suppl. 1): 59 (2002).

11. Nony, P.A., **Roberts, J.D.**, Glasgow, W.C., and Olden, K. “15-Lipoxygenase-2 Mediates Arachidonic Acid-stimulated Adhesion of Human Breast Carcinoma Cells to Type IV Collagen.” *Clinical & Experimental Metastasis*, **19** (Suppl. 1): 63 (2002).
12. Matsuoka, T., **Roberts, J.D.**, Yashiro, M., Hirakawa, K., and Olden, K. “Requirement for PI3K/Akt Signaling in the Attachment and Spreading of Metastatic Scirrhous Gastric Carcinoma.” *Proceedings of the American Association for Cancer Research*, **43**: 10 (2002).
13. Kennett, S.B., **Roberts, J.D.**, Akiyama, S.K., and Olden, K. “Arachidonic Acid Activates Protein Kinase C Isoform μ during Induction of Adhesion of Human Mammary Carcinoma Cells.” *Proceedings of the American Association for Cancer Research*, **43**: 374 (2002).

Community Service

(details available on request)

Volunteer with the Boy Scouts of America, 1987 to present

Volunteer with American Red Cross, CPR instructor, 1998 - 2001

Volunteer with Wake County Public Schools: Junior Great Books program
1988 to 1992

Volunteer with the Research Triangle Math and Science Partnership,
"Scientists in the Classroom," 1995 to 2002